

Additional Notes on Allen (Collin County) Meteorite.

The name "Allen" does not appear in Prior's Catalog or Supplement or the Amer. Mus. Nat. Hist. Catalog and therefore does not seem to be pre-occupied, and can be used.

From every standpoint, the meteorite seems to be distinct from McKinney. An area approximately 2 cm. sq. was ground and polished on one of the older fractured (dark) spots of the stone. A brownish-gray interior, moderately dark, is revealed; closer inspection with a hand lens gives an impression that the brownish (oxidized?) areas have a slight reddish tinge, while the gray portions present a bluish cast. A few very delicate irregular veins show up in properly reflected light; these shine peculiarly, like graphite; near the edges of the polished section a few are worn down into open cracks, as tho the vein material had been ground out or weathered away. There is some tendency for the reddish-brown areas to follow the veined areas.

The metal is only moderately rich--about a fair average. The nickel-iron specks are mostly very small; one outstanding one revealed is slightly under 1 mm. in greatest dimension. The troilite is smaller, but seems nearly if not actually as abundant as the nickel-iron.

A thickly crowded group of chondrules is revealed. They are relatively uniform in size range, mostly very small; 3 or 4 quite noticeable to the unaided eye, and perhaps as many more found with a hand lens, are just a little over 1 mm. in diameter, but the great host of them are tinier. At least two of the largest ones have a slight greenish tinge (olivine?); one of these seems to have a central round core. Most of the chondrules seem to be enstatite, and it is mostly this material, both in chondrules and in background (shattered pieces?) which seems to be bluish-gray. One enstatite chondrule is clearly porphyritic and the fragments in it have a peculiar luster which makes it conspicuous. I would infer a wide variety in the structure of the chondrules, tho probably nothing unusual.

On classification, it is probably a Crystalline Chondrite, Veined (Cka): "hard, crystalline, veined mass with firm chondri of radiate structure, breaking with matrix." I do not think it would classify as an intermediate chondrite, veined (Cia), which is a "firm, polishable mass, with white and gray chondri breaking with matrix; black or metallic veins."

McKinney is a Black Chondrite (Hypersthene), Cs: "dark or black mass; chondri of various kinds breaking with matrix." McKinney has an old, yellowish, limonitic crust. Merrill harps on the black coloring material which everywhere infiltrates it (due to solar heating at perihelion?). It has some very large chondrules. It seems to be very different from the Allen stone.

1938, Dec. 11.



Making a sharp, right-angle turn, this same sort of surface continues on the adjoining lateral surface, <sup>c</sup> which is practically a flat, smooth parallelogram 3 x 6½ cm. The rest of this side <sup>e</sup> is apparently a broken, concave surface with a few broader and gentler pits, and turns abruptly to another similar facet which could be considered as belonging to either this <sup>c</sup> or the next lateral face; <sup>a</sup> this intermediate area in fact represents the upwards and sidewise extension of the "projecting" corner of the base mentioned above.

We have thus described sides 1, 2 and 3, with a portion that may belong to either 3 or 1. <sup>a</sup> <sup>B</sup> <sup>c</sup>  
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The top of the stone, which in part probably represents the brustseite, is the most oddly pitted or ridged face, and probably the most irregular surface. The pits tend to be surrounded by right-angled ridges which protrude as much as a centimeter and such projections are offhand more conspicuous than the pits of which they are really an incident. Flowage is practically non-discernible but may be inferred to some extent; some of the crust, especially on this upper side and the adjoining edges, may be the black original--not dark black but a gray-black.

The shape of the stone is very reminiscent of the Kirbyville stone on a larger scale, lacking, of course, the beautiful detail and preservation of that specimen.

The older chipped-off portions reveal an interior which seems light-colored in three areas, one especially large, tho one or two old breaks seem to show dark interiors. Is the stone brecciated? The very recent tiny chip knocked off reveals a distinctly dark, ore-like appearing interior, with perhaps a tinge of yellow or green. I would guess it is the not unusual crystalline chondrite with mostly olivine and bronzite and fairly metal rich. It has not yet been ground on at any spot. Some small filed areas and a file mark on the upper edge took off more file than stone and tell nothing.

1938, Nov. 15-17.  
Oscar E. Monnig.